

WHAT IS CLAIMED IS:

1. A system for recovery of carbon dioxide contained in exhaust gas, comprising:

5 a carbon dioxide absorber which is provided with an exhaust gas introduction port, an alkaline liquid absorbent introduction port, a remaining exhaust gas discharge port and an alkaline liquid absorbent discharge port and causes gas-liquid contact between the introduced exhaust gas and  
10 alkaline liquid absorbent to absorb carbon dioxide contained in the exhaust gas by the alkaline liquid absorbent;

an alkaline liquid absorbent reflux line which returns the alkaline liquid absorbent discharged from the alkaline liquid absorbent discharge port of the carbon dioxide  
15 absorber back to the alkaline liquid absorbent introduction port; and

a deposition vessel which is interposed in the alkaline liquid absorbent reflux line or connected by a line branched from the alkaline liquid absorbent reflux line, houses the  
20 alkaline liquid absorbent, and houses insoluble compounds which are a reaction product of the alkaline liquid absorbent and the carbon dioxide.

2. The system for recovery of carbon dioxide contained in exhaust gas according to claim 1, further comprising:

25 a concentration measuring device which measures a concentration corresponding to that of the carbon dioxide absorbed by the alkaline liquid absorbent; and

a control device which controls the alkaline liquid

absorbent reflux line according to the concentration corresponding to that of the carbon dioxide absorbed into the alkaline liquid absorbent measured by the concentration measuring device.

5           3. The system for recovery of carbon dioxide contained in exhaust gas according to claim 1, further comprising:

          a regenerator into which the insoluble compounds are supplied and which heats the insoluble compounds to discharge carbon dioxide, and collects the carbon dioxide to regenerate  
10 the carbon dioxide absorption capacity of the alkaline liquid absorbent.

          4. The system for recovery of carbon dioxide contained in exhaust gas according to claim 1, wherein the alkaline liquid absorbent is an aqueous solution of sodium carbonate.

15           5. The system for recovery of carbon dioxide contained in exhaust gas according to claim 1, wherein the alkaline liquid absorbent is an aqueous solution of sodium carbonate containing impurities.

          6. The system for recovery of carbon dioxide contained  
20 in exhaust gas according to claim 1, wherein the insoluble compounds are sodium hydrogencarbonate.

          7. A method for recovery of carbon dioxide contained in exhaust gas, comprising:

          absorbing the carbon dioxide by an alkaline liquid  
25 absorbent by causing gas-liquid contact between the exhaust gas and the alkaline liquid absorbent;

          increasing an absorption amount by repeatedly causing the gas-liquid contact of the alkaline liquid absorbent with

the exhaust gas until a concentration corresponding to that of the carbon dioxide absorbed by the alkaline liquid absorbent reaches a specified value; and

5 depositing insoluble compounds by storing the alkaline liquid absorbent still, when the concentration corresponding to that of the carbon dioxide absorbed by the alkaline liquid absorbent reaches the specified value, to deposit the insoluble compounds which are a reaction product of the alkaline liquid absorbent and the carbon dioxide.

10 8. The method for recovery of carbon dioxide contained in exhaust gas according to claim 7, further comprising:

regenerating the alkaline liquid absorbent by heating the insoluble compounds to discharge carbon dioxide.

15 9. The method for recovery of carbon dioxide contained in exhaust gas according to claim 8, wherein the absorbing step, the absorption amount increasing step, the insoluble compound deposition step and the regenerating step are repeated sequentially.